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## XII.

CONTRIBUTION FROM THE GRAY HERBARIUM OF  
HARVARD UNIVERSITY.

DESCRIPTIONS OF NEW PLANTS, CHIEFLY *GAMOPET-  
ALÆ*, COLLECTED IN MEXICO BY C. G. PRINGLE  
IN 1889 AND 1890.\*

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Presented by Sereno Watson, April 8, 1891.

**XYLOSMA PRINGLEI.** Monœcious, glabrous, armed at the nodes with simple acicular spines 3 to 5 lines in length: leaves small, fascicled in the axils of the spines, coriaceous, elliptical, obtuse, attenuate to a subsessile base, serrulate, veiny, shining above, pale beneath, 9 to 16 lines long by half as broad; the edges more or less revolute and the teeth incurved: flowers fasciculately grouped, 3 to 6 together, with no common peduncle; pedicels slender, 3 or 4 lines long: sepals 4, ovate, acutish, scarcely exceeding half a line in length, glabrous or puberulent on the outer surface, ciliate, minutely pubescent within: stamens 12 to 18, twice as long as the sepals: style 2-3-cleft, and the ovate ovary incompletely 2-3-celled; fruit not seen. — In the Sierra Madre near Monterey, August, 1889 (n. 2784). This is perhaps the same as Dr. Palmer's n. 1062 (collected between San Luis Potosi and Tampico), which differs principally in its ovate leaves and verrucose stem.

**DESMODIUM JALISCANUM**, Watson, var. (?) **OBTUSUM.** Stem 5 to 10 feet high: leaves elliptic, oblong, or even slightly obovate, very obtuse, apiculate: calyx-teeth ovate, obtusish, the upper one retuse; pods appressed-pubescent, very numerous in dense simple or branched racemes. — Rocky slopes, Tamasopo Cañon, San Luis Potosi; October, 1890 (n. 3290).

**PIMPINELLA MEXICANA.** Glabrous: root more or less thickened; stem 4 feet high, with scanty foliage, paniculately branched above: the radical and lower cauline leaves very long-petioled, ternate; leaf-

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\* Of the plants here described the last three only were sent from California and Washington by other collectors.

lets deeply 2-3-parted, the segments ovate or lanceolate, acuminate, more or less narrowed at base, 1 to  $1\frac{1}{2}$  inches long, 10 lines or less in breadth, green above, pale beneath, serrate, the margins of the teeth being slightly thickened and cartilaginous; upper leaves scattered in the diffusely branched inflorescence, pinnately or ternately parted with long linear toothed or serrate segments; the highest leaves reduced to filiform bracts; involucre and involucels none: umbels numerous, with few (2 to 6) often unequal rays 6 to 9 lines in length; umbellets about 12-flowered, only 2 or 3 flowers in each being fertile: corolla white (?) or in the sterile flowers not infrequently purple: fruit a line long, the ribs not very prominent; stylopodium depressed, the margin crenate; oil-tubes numerous; inner surface of the seed plane or very shallowly concave. — Hills of Patzcuaro, Michoacan; November, 1890 (n. 3331).

*EUPATORIUM ESPINOSARUM*, Gray, var. *SUBINTEGRIFOLIUM*. Leaves ovate, acuminate, subentire, very glutinous on both sides: scales of the involucre a little longer and more acute than in the typical form, being in these respects more as in var. *ambiguum*, Gray. — Shaded ledges of lime-rock, San José Pass, San Luis Potosi; October, 1890 (n. 3311).

*GYMNOLOMIA DECUMBENS*. Stems several from a ligneous base, decumbent, simple or branched from near the root, smoothish below, roughened above with very short appressed hairs: lower leaves opposite, elliptical, acute, narrowed to a sessile base, subentire, thickish, rough-pubescent, green on both sides,  $1\frac{1}{2}$  inches long by half as broad; the upper similar but narrower, alternate, sparse: heads terminal, solitary or 2 or 3 together; involucre  $\frac{1}{2}$  inch in diameter; outer scales ovate, acuminate, very rough, the inner larger, smoother, obtusish; chaff oblanceolate, acuminate; rays 12 to 15, narrow, over half an inch in length, yellow; achenes (immature) smooth, angled, and with no trace of teeth or awns. — Rocky hills, Tultenango, State of Mexico; September, 1890 (n. 3263). This species resembles *G. rudis*, Gray, but differs in its decumbent habit, smaller and more entire leaves, smaller heads, ovate not oblong involucral scales, and longer narrower rays. From *G. multiflora*, Nutt., it differs in the ligneous clearly perennial base, as well as in the involucre, etc.

*OTOPAPPUS ALTERNIFOLIUS*. Stem 3 to 6 feet high, striate, smoothish or slightly tomentulose: leaves alternate, ovate-lanceolate, acuminate at both ends, subsessile, with a short roughish pubescence above, white-tomentose beneath: heads in an open corymb, about 15, half an inch or more in diameter; scales of the involucre in several rows, nar-

rowly oblong or lanceolate, some rounded at the apex, others acute: rays 12 to 25, little exceeding the disk; pappus of two very unequal awns, the inner more than half as long as the achene, the outer much shorter; achenes smooth, with a single rib on each face, edges acute, the outer usually wingless, the inner with a narrow wing, which extends up upon the inner awn and there broadens into an auricular appendage. — Limestone hills, San José Pass, San Luis Potosi; October, 1890 (n. 3310). From its peculiar pappus with wing-appendages this plant must be referred to the genus *Otopappus* as extended by Hemsley (Biol. Cent. Am. Bot. 2. 191), and placed near *O. epaleaceus*, Hemsl. The whole habit of the plant with its alternate leaves is that of a *Verbesina*, and it seems thus to connect the two genera, especially since there are several species of *Verbesina*, as *V. Humboldtii*, Spreng., and *V. perymenoides*, Schultz Bip., in which the achenes are more strongly winged on one side than on the other.

SENECIO GUADALAJARENSIS. Herbaceous; stem erect, leafy, sulcate-striate, smooth: leaves elongated lanceolate, 6 to 8 inches long, 9 to 15 lines broad, acute, narrowed at base to a very short naked petiole, pinnately veined, callous-denticulate and minutely ciliate, coriaceous, glabrous on both sides except the veins beneath, the upper surface green, covered with lighter-colored warty blotches (pathological?), the lower surface very glaucous: corymb ample, with rather numerous medium-sized heads; scales of the involucre about 10, strongly carinate, acutish, 4 lines long: rays about 5, rounded at the apex; teeth of the disk-corollas exceeding the short campanulate throat and half the length of the slender tube proper: achenes ribbed, puberulent. — Rich slopes of barranca near Guadalajara, Jalisco; September, 1890 (n. 3280).

LAURENTIA OVATIFOLIA. Annual, 6 to 12 inches high, puberulent; stem slender, flexuous, angled, subsimple or branched above: leaves petiolate, ovate, acute, abrupt or subcordate at base, finely and regularly serrate, about an inch long, two thirds as broad, the lowest smaller, rounder, obtuse, the upper lanceolate; petioles 3 to 5 lines long; pedicels filiform, curving upward, 9 to 12 lines long, two to four times longer than the linear-filiform bracts: flowers small, racemose; calyx-tube hardly any, the lobes linear, acute, not quite equalling the corolla-tube; corolla 2 lines long, the nearly white tube split half-way to the base behind; limb blue, with very dissimilar lobes, the three lower obovate, somewhat united to form a spreading lip, the two upper erect, contracted to narrow points: stamens inserted near the middle of the tube, the two smaller anthers penicillate: capsule

ovate-oblong or elliptic in outline, papery, almost entirely superior, 2-valved at the apex. — Shaded banks near Guadalajara ; September, 1889 (n. 2985) ; also near Cardenas, San Luis Potosi, 1890 (n. 3302). This plant, which was distributed under the name of *Laurentia Michoacana*, var. *ovatifolia*, appears on further examination to be distinct from n. 3337, of which it was at first regarded as a variety. It has the habit of a *Lobelia*, but the corolla is split behind only part way to the base. While in the limb of the corolla and the insertion of the stamens it agrees rather closely with *Palmerella*, the corolla-tube is short, as in *Laurentia*. The plant thus furnishes additional evidence that Schönland is right in uniting the two genera.

Mr. Pringle's n. 3337, the plant which was distributed as *Laurentia Michoacana*, Robinson, is without doubt closely related to the species just described, but is distinguished by its sessile leaves of considerably different form and toothing. It appears to be identical with Parry & Palmer's n. 557, which Hemsley refers to *Lobelia micrantha*, HBK., and with Mr. J. Donnell Smith's n. 22, the *Lobelia Türckheimii* of Vatke (unedited?). The corolla in all these plants, however, is cleft only from one third to half-way to the base, a character which should certainly exclude them from *Lobelia*, as at present defined by Benth. & Hooker, Baillon, Schönland, and others. While the specimens in question agree in most points with *Laurentia ramosissima*, Benth. & Hook. (*Lobelia ramosissima*, Mart. & Gal.), they are distinguished by their much smaller flowers. Unfortunately, however, Martens and Galeotti have characterized, under the name of *Lobelia parviflora*, a plant which also appears from their rather unsatisfactory description to differ from their *Lobelia ramosissima* chiefly in the same respect, namely the shorter corolla. This being the case, it seems best that all three of the numbers just cited should be for the present doubtfully referred to *Lobelia parviflora*, Mart. & Gal., since it is highly probable that the type of this species will be found on investigation to be a *Laurentia*, just as the *Lobelia ramosissima* of the same authors has already proved.

**LOBELIA NOVELLA.** Stem a foot high, branching, with a few rather large leaves near the base, almost naked above : leaves petiolate, broadly ovate, acute or obtusish, rounded or subcordate at base, undulate and finely mucronate-denticulate, hispid on both sides, scarcely paler beneath,  $2\frac{1}{2}$  to 3 inches long, 2 inches in breadth ; upper leaves few, much smaller, sharply and doubly denticulate ; racemes long, secund ; bractlets minute, scarcely exceeding a line in length ; pedicels 6 to 9 lines long : calyx-tube turbinate, in fruit equalling or surpassing the

narrowly linear obtuse lobes; corolla blue and white, the lobes of the lower lip obovate-spatulate, longer than the very narrow upper lobes; capsule half-inferior. — Cool ledges and gravelly banks, Tamasopo Cañon, San Luis Potosi; October, 1890 (n. 3288). Resembles *L. Sartorii*, Vatke (ex char.), but is distinguished by the elongated racemes, and by the size, shape, and indentation of the leaves.

*NEMACLADUS OPPOSITIFOLIUS*. Stems a foot high, much branched from near the ground; branches becoming erect from a decumbent base, usually simple, each bearing about six pairs of subopposite leaves, and then continued as a long naked racemose inflorescence: leaves petiolate, ovate, acuminate, rounded at base but inconspicuously decurrent upon the petioles and stem, sharply dentate, smooth, 9 to 15 lines long; petioles 2 or 3 lines in length; bracts minute, awl-shaped, scarcely a line in length, the bractlets subtending the calyx similar; pedicels not exceeding 2 lines long; calyx-tube short, rounded at base, the segments equal, awl-shaped, acute, a line long; corolla-tube not equaling the calyx-lobes, the lower lip consisting of two ovate spreading segments, much longer than the three upper lobes: staminal column ascending against the upper lip of the corolla and then curved forward; anthers stellately divaricate around the stigma, not at all appendaged: mature capsule nearly equalling the calyx-lobes, two-valved at the apex. — Dry calcareous bluffs near Cardenas, San Luis Potosi; October, 1890 (n. 3300). This plant, which is identical with Dr. Coulter's n. 30, differs greatly in habit from the known species of *Nemacladus*. It possesses, however, just the characters which distinguish this genus in such a marked manner; namely, the stellately divaricate anthers, and the division of the corolla into a three-lobed upper lip and a two-lobed lower lip. The subopposite leaves appear to be anomalous among the *Lobeliaceæ*.

*SYMPLOCOS PRINGLEI*. A small tree, 20 to 30 feet high; branchlets and petioles covered with a very short rufous tomentum; leaves elliptical, varying from obtusish to abruptly acuminate, cuneate at base, sharply and regularly serrulate, subcoriaceous, green and glabrous above, slightly paler beneath and pubescent especially along the midrib,  $2\frac{1}{2}$  to 4 inches long by  $1\frac{1}{2}$  broad; petioles 4 to 6 lines long: flowers usually aggregated by twos and threes, subsessile upon a scarcely distinguishable common peduncle, occasionally solitary; calyx silvery-sericeous; lobes ovate, rounded or more or less pointed at the apex; petals 5, broadly spatulate, coherent for a third of their length, either smooth or very minutely pubescent on the outer surface: stamens obscurely 4-5-delphous, united high up, adnate to the corolla for half its

length : lower part of the style as well as the apex of the ovary strongly hirsute ; ovary 3-celled ; fruit oblong, dark-colored, with slight puberulence, tipped with the hardened calyx-teeth. — Hills of Patzcuaro, Michoacan ; November, 1890 (n. 3345). Resembles in many respects *S. prionophylla*, Hemsl. (ex char.), but has leaves not at all ovate, and the petals nearly smooth and united with each other and with the stamens for about half their length. In the species just mentioned they are described as nearly or quite free.

*GONOLOBUS PARVIFLORUS*, Gray, var. *BREVICORONATUS*. Corolla erect, instead of being reflexed as in the type ; the outer crown of five short rather thick truncate scales, which are not at all produced into lobes at the edges ; the inner crown of five horns as in the typical form. — Laredo, Texas ; July, 1889 (n. 3029).

*BUDDLEIA CHAPALANA*. Suffrutescent ; branches with a smooth yellowish bark ; branchlets woolly : leaves ovate or ovate-oblong,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches long, an inch broad, appearing more or less rhombic in outline from being contracted at base into a broadly winged petiole, auriculate-perfoliate, acute, rather coarsely and bluntly toothed, woolly on both sides when young, becoming nearly smooth at maturity and retaining only a slight mealiness ; floral leaves much smaller, lanceolate, scarcely perfoliate : flowers in globular heads ; the heads half an inch in diameter and borne in pairs on axillary peduncles about 4 lines long ; corolla  $1\frac{1}{2}$  lines in diameter, short, not or scarcely exceeding the woolly calyx. — On dry cliffs in the mountains near Lake Chapala, Jalisco ; December, 1889 (n. 2972).

*CORDIA PRINGLEI*. A shrub 10 to 15 feet high, belonging to the section *Dasycephalæ* ; branchlets, peduncles and petioles stellate-tomentose : leaves ovate or ovate-oblong, more or less narrowed to an obtuse apex, often one-sided, all but the smallest abrupt or even subcordate at base, crenate-dentate with irregular teeth, green and finely stellate-pubescent above, lighter and tomentose beneath, 3 inches long, 1 or 2 inches broad ; petioles 6 lines in length : heads globular, an inch in diameter on subterminal peduncles  $1\frac{1}{2}$  inches long ; calyx narrowly campanulate, the tube white-pubescent, and the filiform teeth stellately ferruginous-pubescent, curled irregularly, mostly reflexed ; corolla funnel-form, white, 5 lines broad, with obtuse lobes : stamens inserted near the summit of the pubescent throat. — Las Palmas, San Luis Potosi ; June, 1890 (n. 3091). Differs from *C. ambigua*, Cham. & Schl., in its larger heads and the abrupt or subcordate bases of the leaves, as well as in the absence of the long spreading hairs on the petioles and peduncles. Mr. Pringle's plant much resembles a speci-

men from Nicaragua, collected by C. Wright (N. Pacif. Expl. Exped. 1853-56). The latter differs, however, in its larger flowers and more finely toothed leaves, which are more densely and roughly pubescent upon the upper surface.

**HELIOTROPIUM PRINGLEI.** A spreading annual, branching from the base, 2 to 5 inches high, silky-villous: leaves elliptic-lanceolate, acute at both ends, 4 to 6 lines long, 2 lines broad; petioles 1 or 2 lines long: flowers scattered along the leafy branches from near the base; calyx-lobes lance-linear, acuminate; corolla-tube 1 to  $1\frac{1}{2}$  lines long, the limb abruptly expanding,  $2\frac{1}{2}$  lines broad, with five acutish primary lobes, with which five short teeth alternate: fruit separable at maturity into four nutlets, minutely reticulate-roughened on the back but not hispid. — Santa Eulalia Mountains, Chihuahua, October, 1886 (n. 1160); also in thin soil of rocky hills, Las Canoas, San Luis Potosi, July, 1890 (n. 3207). This species resembles in habit *H. phyllostachyum*, Torr., but has flowers more than twice as large. It is distinguished from *H. limbatum*, Benth., under which name n. 1160 was distributed, by its broader leaves, very scattered flowers, more acute lobes of calyx and corolla, rougher nutlets, and its more decidedly annual character. The inflorescence in *H. limbatum* is distinctly terminal and compact, and the root often clearly perennial.

**OMPHALODES ACUMINATA.** Stem weak, procumbent, diffusely branched, nearly smooth, 18 inches long or more, leafy throughout: leaves deltoid, attenuate-acuminate, entire, 2 inches long, 15 lines in breadth, cordate with rounded lobes and broad sinus, membranaceous, nearly smooth above, puberulent with very short hairs beneath; the upper leaves smaller, lanceolate, subcordate or rounded at base; petioles 1 to  $1\frac{1}{2}$  inches long: peduncles lateral, scattered, very slender, flexuous-spreading, 9 to 12 lines in length: calyx-lobes oblong, acute; corolla 4 or 5 lines broad, rose-color, with short tube and rounded spreading segments; scales very prominent, nearly globular, minutely papillose: nutlets orbicular, only one in each flower ripening,  $1\frac{1}{2}$  lines in diameter at maturity, flat, horizontal over the gynobase, the wing reflexed, about 30-toothed. — In the Sierra Madre, near Monterey; June, 1888 (n. 2220). Resembles *O. cardiophylla*, Gray, but is smoother throughout and has much longer stems of more straggling habit, the leaves twice as large, of more delicate texture, and much more attenuate at the apex. In that species, moreover, two to four nutlets mature and the wing-borders have but half as many teeth.

**IPOMŒA LEONENSIS.** Root tuberous, an inch thick; stem twining, striate-angulate, minutely roughened: leaves deeply palmately 5-lobed,



cordate or subcordate, 3 to 5 inches broad, punctate above and with a soft deciduous tomentum beneath, the lobes lanceolate, rounded at the apex and inconspicuously mucronate, or in young leaves sometimes acutish, the two outer lobes of the larger leaves each appendaged at base with a large blunt auricle; petioles an inch long or more, roughened especially near the base by numerous small tuberculate glands: peduncles 2 inches long, 1-flowered, puberulent; bractlets minute or obsolete; pedicels half an inch long: sepals ovate, with rounded apex, 4 lines long, canescent with very short appressed silvery hairs; corolla nearly 3 inches long, twice the length of the stamens, purple. — Calcareous ledges near Monterey; June, 1889 (n. 2840). Allied to *A. digitata*, L., but differing in its 1-flowered peduncles and glandular petioles, as well as in the shape and pubescence of the leaves. The flowers are also larger and the throat relatively narrower.

**BASSOVIA MEXICANA.** A shrub, 5 to 15 feet high; branches unequally dichotomous, slightly striate-angled and minutely verrucose: leaves membranaceous, geminate, ovate, acuminate, the larger  $1\frac{1}{2}$  to 2 inches long,  $\frac{3}{4}$  to 1 inch broad, the smaller half as large, all abrupt at base or slightly decurrent on one side upon the slender petiole, green on both sides, slightly scabrous above, sparsely pubescent on the veins beneath: inflorescence umbelliform, sessile, axillary; pedicels 2 to 6, 1-flowered, 4 to 5 lines long, striate, slightly thickened upward: calyx spreading, shallow cup-shaped, strictly truncate, persistent; corolla 3 to  $3\frac{1}{2}$  lines in length, divided to the middle or even more deeply; tube short, slender; limb campanulate, of 4 or 5 lanceolate acuminate segments, puberulent upon the outside; stamens exserted, the filaments at maturity exceeding the anthers; throat of the corolla and base of the filaments bearded: fruit the size of a pea, red (turning black?), many-seeded; seeds a little over half a line in diameter, compressed, roughened with pits. — Tamasopo Cañon, San Luis Potosi; June, 1890 (n. 3071). Resembles some species of the genus *Brachistus* in its truncate calyx, but has the deeply cleft valvate corolla of *Bassovia*, and shows close affinity to *B. macrophylla*, Benth. & Hook. (*Witheringia macrophylla*, auct.), from which it differs principally in its ligneous stem, much smaller leaves, fewer-flowered fascicles, and more persistent calyx. The distinctions between *Bassovia* and *Brachistus* are not at all satisfactory, and considering the intermediate character of this new species it seems best to refer it to the older genus.

**WITHANIA(?) MELANOCYSTIS.** A shrub, 5 to 8 feet high, minutely pubescent on the leaves and younger parts; branches gray, striate: leaves single or geminate, lanceolate to ovate-lanceolate, acute, entire

15 lines long by 6 wide, narrowed at the base into a petiole 3 to 4 lines in length: flowers 2 to 4 at each node, usually but one of each group fruiting; common peduncle none; pedicels slender, 3 lines long: calyx-teeth 5, at anthesis ovate, one third as long as the tube; fruiting calyx much enlarged, bladder-like, neither angled nor conspicuously veined, becoming black, 9 lines in diameter, with throat contracted and teeth relatively short; corolla campanulate, 5 lines long, with a more or less spreading limb of five ovate acutish segments equalling the tube, pale yellow with conspicuous dark spots in the puberulent throat; filaments inserted in the middle of the short tube, half the length of the oblong anthers: berry globular, red, much smaller than the enclosing calyx; seeds roughened, compressed, yellow. — Tamasopo Cañon, San Luis Potosi; June to October, 1890 (n. 3285). A plant of puzzling affinities, possessing the habit of a *Physalis*, but having a woody stem, clustered flowers, calyx without conspicuous angles or veins, and anthers much exceeding the filaments. Some of the characters resemble those of *Athenæa*; in that genus, however, the fruiting calyx is much more deeply divided.

**HERPSTIS AURICULATA.** Roots fibrous; stem erect, smooth, sharply 4-angled, much branched above, a foot high; branches mostly simple: leaves lanceolate, acute, serrulate, sessile with an auriculate-clasping base, punctate, 8 to 10 lines long, 3 lines broad; floral leaves gradually reduced to linear bracts 2 to 3 lines long: flowers small, axillary, mostly in pairs, opposite at each node; pedicels filiform, 3 lines long; divisions of the calyx acuminate, a line long, becoming  $1\frac{1}{2}$  lines long in fruit, very unequal in breadth, three of them ovate, the inner two rather narrowly lanceolate, none of them at all oblong; corolla purplish, 3 lines long, slightly bearded within near the summit of the tube; rudimentary stamen present, very small, subulate: capsule depressed-ovoid, subglobose, not exceeding the calyx, 2-valved. — Wet places near Guadalajara; November, 1889 (n. 2937).

**GERARDIA PUNCTATA.** Stem puberulent, much branched: leaves small, numerous, opposite or appearing fascicled, linear, entire, acute, smooth, 7 to 10 lines long, a line or less in breadth; bracts similar: flowers rather numerous, opposite in long subspicate racemes; pedicels 1 to 2 lines long: calyx smooth, 10-nerved, often punctate with small purple dots, the five teeth lanceolate, acuminate, exceeding the tube, the intermediate nerves terminating at each sinus in a minute glandular prominence; corolla purple, tubular-campanulate, an inch long, the lobes a fourth as long as the tube; stamens conspicuously didynamous, the upper pair being much shorter and having considerably

smaller anthers than the lower; filaments glabrous; anthers hirsute, mucronate at the base of each cell: style puberulent; capsule ovate, acuminate, equalling the calyx-lobes; seeds oblong, light brown, the external seed-coat loose, cellular, and iridescent. — Hills of Zacatecas; October, 1888 (n. 2183).

**CASTILLEIA MACROSTIGMA.** Perennial, 8 inches to a foot high, nearly smooth or more or less hispid with weak spreading hairs: leaves small, rather numerous especially at the base, linear, acute, entire, subamplexicaul, 1–3-nerved, 9 to 15 lines long, seldom exceeding a line in breadth; floral leaves broader and shorter, lanceolate or narrowly ovate, angled or sparingly toothed toward the apex, often yellow-tipped: flowers closely sessile in a short spike, slender, 8 to 12 lines long, surpassing the bracts; calyx light yellow, equally cleft before and behind, the lobes emarginate or two-toothed; corolla a third longer than the calyx, yellow, the lower teeth linear, acuminate, erect: stigmas conspicuously exserted, thickish, sometimes more than a line long, recurved. — Grassy slopes, Flor de Maria, Mexico; July, 1890 (n. 3194). This appears to be the same as Mr. Pringle's n. 1545 from Chihuahua, which was distributed under the provisional and unedited name of *C. lithospermoides*, HBK., var. (?) *flava*, Watson. Specimens of this number differ from 3194 chiefly in being more hispid and in having the stigmas less prominently exserted, which differences may be in part due to the less advanced stage of development. Both plants differ from *C. lithospermoides* in the size and color of the corolla, in the deeply cleft conspicuously exserted stigma, and also in the shorter relatively thicker and more coarsely reticulated seeds.

**RUELLIA BOURGÆI**, Hemsley. The mature capsules of this species, which were wanting in the type specimens and could not therefore be described, are excellently shown in Mr. Pringle's n. 2951 (barranca near Guadalajara, September, 1889). They are rigid, lanceolate, acutish, cuspidate, glabrous, 2 to  $2\frac{1}{4}$  inches long and  $\frac{1}{2}$  inch broad, the valves with a conspicuous median furrow; hooks ascending, bifid; seeds orbicular, nearly 3 lines in diameter.

**JUSTICIA PRINGLEI.** Herbaceous, 2 feet high, hirsute with spreading white hairs: leaves ovate, acuminate, entire, petiolate,  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches long, half as wide; the lowest smaller, orbicular, obtuse: flowers small, distant, borne in a spreading panicle; lower bracts foliar, ovate, the upper much smaller, lanceolate; bractlets minute, awl-shaped, half the length of the calyx; calyx-teeth 4, narrowly linear, attenuate,  $2\frac{1}{2}$  to 3 lines long; corolla 4 to 5 lines long, pale rose-color, the limb nearly equalling the tube, the upper lip narrowed to a retuse summit,

the lower lip rounded: anther-cells nearly equal in size, the upper not ciliate, minutely mucronate at the base, the lower with a conspicuous spur: capsule 5 lines long, soft-pubescent, 4-seeded; seeds compressed, very hairy especially at the edge. — On hills near Guadalajara; October, 1889 (n. 2967). This species seems anomalous among the New World members of the genus. It resembles more nearly the species of the § *Rhaphidospora* of the Old World, which have a diffuse inflorescence and echinate-hispid seeds. It differs from § *Sarotheca* chiefly in lacking the ciliation of the anthers.

**CITHAREXYLUM BERLANDIERI.** Ten to fifteen feet high; branches gray, striate; branchlets pubescent, striate, acutely 4-angled but soon becoming round; leaves ovate or rhombic, varying in the same individual from acute to retuse at the apex, shortly cuneate at base, membranaceous, puberulent above, soft-pubescent beneath, 1 to 1½ inches long, 9 lines broad, entire, or some with a few blunt teeth near the apex: inflorescence terminal, subspicate, more or less flexuous, 1 to 2 inches long, becoming more rigid in fruit; pedicels half a line long, with minute filiform bractlets of the same length: calyx turbinate, 2 lines long, striate, pubescent, the five subequal teeth erect, very short and blunt; corolla-tube just equalling the calyx, pubescent within, the spreading limb of five rounded lobes, puberulent on both sides: fertile stamens four, filaments hairy; the fifth stamen present as an antherless rudiment: drupes dark brown, as large as peas, crowded in the spikes. — Rocky hills, Las Canoas, San Luis Potosi; July, 1890 (n. 3222). Apparently identical with n. 3182 of Berlandier, collected near Matamoras, May, 1832. This specimen of Berlandier's was doubtfully referred by Dr. Gray to *C. villosum*, Jacq., and has formed the sole evidence that this species occurs in Mexico. In the light of Mr. Pringle's better material, however, it is clear that the Mexican plant is quite distinct from the species just mentioned.

**SCUTELLARIA HISPIDULA.** Perennial with ligneous base; stems numerous, mostly simple, hispidulous, a span high, often dark purple as well as the floral leaves and calyx: leaves small, ovate or ovate-elliptic, subglabrous or very minutely hispid but not at all cinereous-pubescent, 4 to 5 lines long (about half the length of the internodes), 2 to 3 lines broad, all except the very lowest abrupt at the base and sessile: flowers numerous, of medium size, with short pedicels; calyx strongly accrescent, hispid with short white hairs; corolla blue, white in the throat, soft-pubescent on the outside, 5 to 7 lines long, the upper lip but slightly cucullate; upper stamens often exerted. — Meadows, Flor de Maria, Mexico; August, 1890 (n. 3233). A plant with the habit

of *S. Drummondii*, Benth., and *S. Wrightii*, Gray, but distinguished from the former by its ligneous base and clearly perennial nature, and from the latter by the form of the leaves, character of the pubescence, smaller blue flowers, and less cucullate upper lip. While it may ultimately prove to be a variety of *S. Wrightii*, such a disposition of it in the absence of connecting forms and with the difference of geographic occurrence would at present be unwarranted.

**MIMULUS CONGDONII.** Very small, at flowering subcaulescent; stems glandular-pubescent, becoming in fruit 1 to 4 inches high, much branched near the base; branches simple: leaves ovate or lanceolate, obtuse, entire, dark purple beneath,  $\frac{1}{2}$  an inch long, narrowed at base to ciliate petioles of nearly equal length; peduncles in fruit  $1\frac{1}{2}$  to 2 lines long, often reflexed: flowers very small; calyx-tube very slender, prismatic, glandular-puberulent, moderately gibbous at base, becoming strongly so in fruit, ending obliquely in short teeth, the upper tooth the longest; corolla rose-purple, the slender tube 4 to 6 lines in length, with little or no distinctly enlarged throat, the sub-regular abruptly spreading limb  $1\frac{1}{2}$  to 2 lines in diameter; stamens strongly didynamous, the upper pair much shorter and occasionally with abortive anthers: style puberulent above; capsule cartilaginous, very gibbous, laterally compressed, narrowed from a moderately broad base, acute, deeply furrowed on the sides; seeds minute, acute at each end.—Collected by Mr. J. W. Congdon, in Mariposa County, California, at Zimmerman's Ranch, in March, 1887, in April, 1888 (flowers and fruit), and in May, 1888 (fruit); also at Stockton Creek, March, 1889 (flowers); and at Agua Fria (fruit). The diminutive size and nearly acaulescent character of flowering specimens of this plant made it at first appear probable that it represented merely a dwarfed, early-spring form of one of the larger-flowered species. The constant characters of Mr. Congdon's specimens, however, collected as they were at different dates and localities, and representing very different stages of development, prove it a normal form and a distinct species. While the vegetative habit is much like that of *M. Kelloggii*, Curran, it is distinguished from that species by its much shorter corolla-tube and smaller limb, as well as by its acute and not at all oblong capsules. From *M. pulchellus*, Greene, it differs in its smaller rose-purple corolla without the yellow lip, in its much shorter calyx-teeth, and in other ways. In its short corolla-tube and very gibbous capsule it resembles *M. latifolius*, Gray, but differs in its smaller size, in its habit of branching from the base, (the stem of *M. latifolius* although branching above is simple below,) in its very slender calyx-

tube, longer and usually reflexed peduncles, and relatively slender and more acute capsules. Like *M. latifolius*, this species is somewhat intermediate between §§ *Enoe* and *Eunanus*.

**MIMULUS GRACILIPES.** A delicate annual, 3 to 5 inches high; stem usually simple, glandular-puberulent under a lens: leaves about four pairs, very small, seldom exceeding 4 lines in length, sessile, lanceolate, obtusish or scarcely acute, entire or minutely denticulate, the roundish cotyledonary(?) leaves persisting at base: peduncles springing by pairs from each node, an inch long, filiform, spreading horizontally and gracefully curved upward: calyx oblong-campanulate, a little over 2 lines in length, a line in diameter, the equal teeth slightly spreading, obtuse, strongly ciliate; corolla rose-purple with yellow markings in the throat, the tube not quite twice the length of the calyx; limb spreading, 3 or 4 lines in diameter, strongly bilabiate, the upper lip much shorter than the ample 3-lobed lower one: capsule symmetrical, of delicate texture, elliptical in outline, 2 lines in length, included in the scarcely inflated calyx; seeds obtuse, apiculate at each end. — Collected by Mr. J. W. Congdon, at Mormon Bar, Mariposa County, April, 1889. Near *M. rubellus*, Gray, and *M. deflexus*, Watson, but differing from the former in its simple stem, much larger corolla, and longer peduncles; from the latter in the color of its corolla; and from both these and various other related species in its ciliate calyx.

**ASTER ENGELMANNI**, Gray, var. (?) **PAUCICAPITATUS.** Slender; stem weak and flexuous: leaves numerous, oblong-elliptic, obtusish, apiculate, puberulent above and with scanty traces of tomentum beneath, 10 to 15 lines long, a fourth as broad: heads solitary, terminal, or sometimes 3 to 5; scales of the involucre more equal and less closely imbricated than in the typical form or other varieties; rays white or pink. — Collected by Mr. C. V. Piper in the Olympic Mountains, Washington, September, 1890. This is a very puzzling form and perhaps a distinct species. If, however, Dr. Gray was right in classing *A. ledophyllus*, Gray, and *A. Engelmanni*, var. *glaucescens*, as varieties of the same species, Mr. Piper's plants, which are in some regards intermediate between these varieties, should probably also be included in *A. Engelmanni*.

In closing, the writer wishes to express his warmest thanks to Dr. Sereno Watson for his kind and ready aid in many points of difficult classification and perplexing nomenclature.